RubberWorld

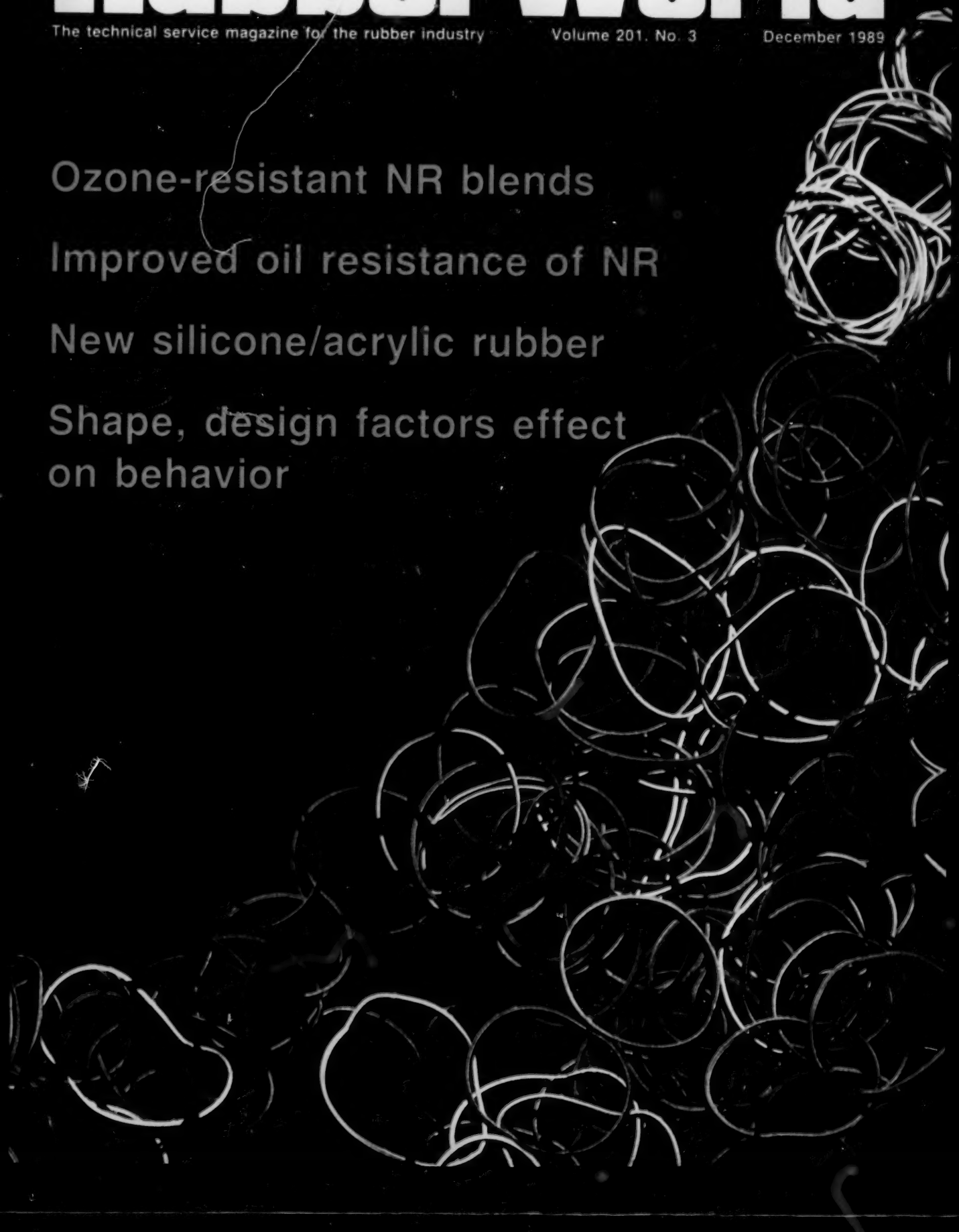
The technical service magazine for the rubber industry Volume 201. No. 3 December 1989

Ozone-resistant NR blends

Improved oil resistance of NR

New silicone/acrylic rubber

Shape, design factors effect on behavior



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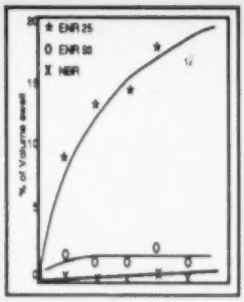

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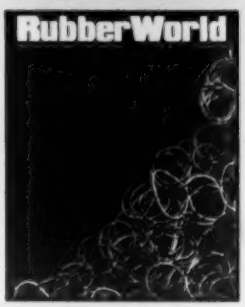

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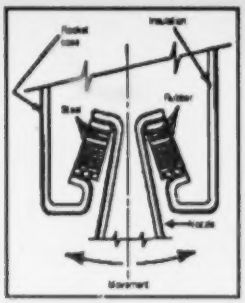

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Cover

Cover photo courtesy of The Malaysian Rubber Bureau.

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The Audit Bureau

Editorial

This time of year around here is the directory season. We are gathering information for directories of instrumentation and testing equipment suppliers, independent testing labs and custom services suppliers for *Rubber World*, automotive parts and material suppliers for *Automotive Polymers & Design* (a Lippincott & Peto magazine), along with editing the voluminous *Blue Book: materials, compounding ingredients, machinery and services for rubber*. If you supply the rubber industry one of our editors has contacted you recently for your company's information. Hopefully you returned it. Hopefully by the deadline. Hopefully it was legible. And hopefully, if you do supply the rubber industry, you were surveyed.

The editors have little control over the first three items and some more over who gets surveyed. We feel that over the years we have compiled some comprehensive directories of suppliers to various segments of the rubber industry. Some companies might not be listed, most likely because they chose not to be included. But sometimes our mailings may miss someone and we usually hear about it after the fact. You are reading this before these lists get published, and if you believe your company might not be included in one of the aforementioned directories, call me, we'll correct the oversight.

With this being directory season (we know other publishers are asking for information at this time as well) here are some tips we thought we would pass along, not only to benefit us, but those who use these directories at work:

• *Make sure any inclusion is legible* - It's amazing what some people call writing. Signatures that look like EKG lines and words without any discernible letters pop up. We would question the author over the phone if we knew who signed the return.

• *Make sure request is returned by the deadline* - We usually give plenty of lead time from when the request is made. It's ironic that the companies with the most Blue Book listings have plenty of time to respond, while those with 10 minutes of editing will return weeks past the deadline.

• *Follow the directions* - Don't provide information that doesn't fit the format or pertain to the request

• *Make sure any inclusion is legible* - This cannot be stressed enough.

Hopefully this directory season you'll be easy on us. So if you have a directory request sitting around the desk, complete it and return it now. Legibly.

Don R. Smith
Editor

RubberWorld

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RUBBER WORLD, ISSN-0035-9572, December 1989 Vol. 201, No. 2.

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Business Briefs

the pellet and fluff storage center, a motor control center, control room and cooling tower. An investigation is pending, and an official cause has yet to be established. An undetermined amount of polyethylene inventory stocked at the site was destroyed.

Phillips Petroleum reported third quarter net income of $87 million and total revenues of $3.1 billion.

PPG reported third quarter net earnings of $106.7 million on sales of $1.36 billion.

Rubbermaid's third quarter sales were $352 million and earnings were $32.6 million.

Specialty raw materials distributor, **Sethco**, changed its name to **Votech**, a joint venture of **Seegott**, Solon, OH and **E.T. Horn**, La Mirada, CA.

Standard Products achieved sales of $151.0 million and net income of $1.395 million for the first quarter of 1990.

Sumitomo Chemical reported net income of $310,913 on sales of $7.121 million for 1988.

UCB showed a profit of 664 BF million after tax for the first half of 1989, and reported net sales of 17.7 BF million.

Union Carbide has introduced a new chemistry system which is said to allow production of virtually all flexible polyurethane foams without the use of chlorofluorocarbons or methylene chloride. The products are marketed under the name Geolite Additives, used to produce flexible foam cushioning.

Markets, News

The **United States International Trade Commission** unanimously determined on November 1, under section 733(a) of the Tariff Act of 1930, that there is no reasonable indication that an industry in the United States is materially injured, or threatened with material injury, by reason of imports of polychloroprene from France and the Federal Republic of Germany that are allegedly sold at less than fair value. The investigation was prompted when **Du Pont** filed a petition September 22, seeking to impose a duty on the exporting countries to correct the difference between their prices and U.S. prices. Du Pont believed the countries were unfairly dumping imports of polychloroprene. Specifically, the suit charged **Bayer AG** of West Germany and **Distugil SA** of France with unfair dumping.

Associated Rubber, Quakertown, PA, and **Lawrence Industries**, Burlington, NC, were presented Rubber Manufacturers Association Safety & Health Improvement Awards for excellence. Awards for "Most Improved" were presented to **Cooper Tire & Rubber**, Findlay, OH; **Ottawa Rubber**, Holland, OH; and **Rubber Rolls**, Pittsburgh, PA. Improvement awards were presented to **Castle Rubber**, Butler, PA; **Molded Dimensions**, Port Washington, WI; **Pawling**, Pawling, NY; **Sperry Rubber & Plastics**, Brookville, IN; and **West American Rubber** from Orange, CA.

Overcapacity for thermoplastic elastomers will occur in global markets over the next five years, according to "TPE 2000," a jointly produced study conducted by **Gabris International** and **Harborside Research Group**. Contributors to the overcapacity are new competing materials such

Projected TPE growth - North America and Europe

% AAGR*, all TPEs, by major market, 1988 to 1993, for a 375,000 ton business

Major market	% AAGR North America	Western Europe
Wire & cable	5.0%	10.7%
Hose & tubing	4.0%	7.3%
Polymer modification (1)	7.5%	4.0%
Automotive (2)	2.7%	3.0%
Film & sheet	12.0%	8.0%
Other fabrications	6.0%	6.0%
Medical 15.0%	9.0%	
Footwear (3.6%)	(3.3%)	
All markets	7.6%	2.0%

* Average annual growth rate
(1) Includes blends & alloys
(2) Except wire & cable

Source: Gabris Intl.; Harborside Research

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as PVC-nitrile TPEs, evolving reactor grades of polypropylene TPOs and announced new capacity for styrenic block copolymers. Contributing to the slower growth of TPEs are the facts that many North American applications are approaching saturation; environmental concerns will replace halogenated elastomers with TPEs, which compete with nonhalogenated elastomers; resin suppliers and compounders are increasing their focus on the development of higher added-value engineering thermoplastic elastomers; and finally, with a unified European standard equivalent to UL 62 for the wire and cable industry occurring by 1992, the market for TPEs will be more consolidated. Presently, Europe's lack of a unified standard has resulted in a more fragmented market for TPE than in North America.

Overall growth in thermoplastic elastomer consumption is expected to average 7.6 percent annually throughout 1992 in North America, but only 2.0 percent in Western Europe during the same period. Medical, film and sheet, and polymer modification, currently emerging businesses, will provide the highest growing markets in North America. In western Europe, wire and cable applications could increase significantly as replacements for halogenated elastomers which are likely to be banned for environmental and toxicity reasons.

Production of rubber processing chemicals experienced a decrease of 8 percent for 1988, from 353 million pounds produced in 1988 compared to 1987's figure of 382 million pounds. Consequently, sales for 1988 decreased from 266 million pounds, valued at $424 million, compared with 289 million pounds sold in 1987 worth $359 million.

Production of cyclic rubber-processing chemicals experienced a decrease compared to 1987 production figures. Production in 1988 amounted to 318 million pounds, while 1987's figure was 354 million pounds, or 10 percent less. 1988 sales saw only 236 million pounds sold, valued at $397 million, compared to 263 million pounds valued at $336 million sold in 1987. Of the total cyclic rubber-processing chemicals produced in 1988, antioxidants, antiozonants and stabilizers accounted for 70 percent, and accelerators, activators and vulcanizing agents for 26 percent.

Rubber processing chemicals - U.S. production and sales, 1988

Rubber processing chemicals	*Production* 1,000 pounds	*Sales* quantity 1,000 pounds	*Sales* value 1,000 dollars	*Average unit value*[1] Per pound
Grand total	352,730	265,686	423,913	$1.60
Cyclic total	318,482	236,298	397,388	1.68
Accelerators, activators, and vulcanizing agents, total	83,228	64,662	107,190	1.66
Thiazole derivatives, total	78,507	60,739	91,743	1.51
N-tert-butyl-2-benzothiazolesulfenamide	19,407	24,158	41,550	1.72
2,2'-Dithiobis [benzothiazole]	11,957	13,150	13,681	1.04
All other thiazole derivatives	47,143	23,425	36,512	1.56
All other accelerators, activators, and vulcanizing agents[2,3]	4,721	3,929	15,447	3.93
Antioxidants, antiozonants, and stabilizers, total	223,662	160,343	255,580	1.59
Amino compounds, total	133,681	104,164	168,354	1.62
Substituted p-phenylenediamines	84,987	55,797	103,551	1.86
All other amino compounds[4]	48,694	48,367	64,803	1.34
Phenolic and phosphite compounds, total[5]	89,981	56,179	87,226	1.55
Polyphenolics	7,813	6,904	24,083	3.49
Phenol, hindered	(6)	1,304	2,654	2.04
All other phenolic and phosphite compounds	82,168	47,971	60,489	1.18
All other cyclic rubber processing chemicals[7]	11,592	11,294	34,618	3.07
Acyclic Total	34,248	29,370	26,525	.90
Accelerators, activators, and vulcanizing agents	5,878	4,726	11,479	2.43
All other acyclic rubber processing chemicals[8]	28,370	26,644	15,046	.61

[1]Calculated from unrounded figures.
[2]Includes aldehyde-amine reaction products, dithiocarbamates, and other accelerators, activators, and vulcanizing agents.
[3]Data on dithiocarbamates included in this table are from materials used chiefly in the processing on natural and synthetic rubber. Data on dithiocarbamates, which are used chiefly as fungicides, are included in the section on "Pesticides and related products."
[4]Includes aldehyde- and acetone-amine reaction products and other amines.
[5]Also includes other antioxidants, antiozonants, and stabilizers.
[6]Reported data were accepted in confidence and may not be published, or no data were reported.
[7]Includes blowing agents, peptizers, and other cyclic rubber-processing chemicals
[8]Includes polymerization regulators, shortstops, and other acyclic rubber processing chemicals.

Source: U.S. International Trade Commission